

Using a Number Line to Model Concepts

Rationale: This project is used to build greater number sense by using a number line to model to compare numerical values

Instructions: Student is assigned or given the choice of the types of numbers or values to compare. Using a sentence strip and the perimeters set forth by the teacher student will creatively create a number line illustrating understanding of number sense.

Possible Uses:

- Positive and Negative Numbers (whole numbers and fractions)
- Fractions and Decimals
- Mixed Numbers and Improper Fractions
- Rational and Irrational Numbers

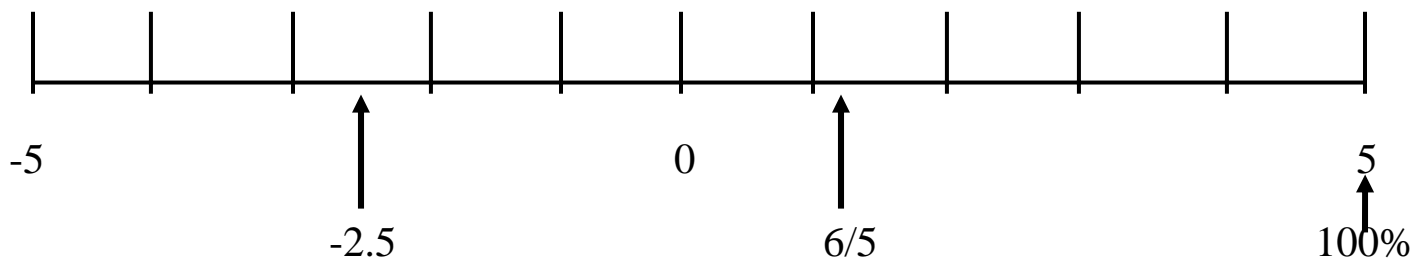
One Possible Scenario: *Fractions, Decimals and Percents on a Number Line*

Requirements:

1. On a number line that goes from -5 to 5, include at least **two** of each of the following numbers, one on the **negative** side, and one on the **positive** side.
 - a) Fractions (less than 1): Examples— $\frac{1}{2}, \frac{2}{5}, \frac{3}{4}, \frac{5}{7}, \frac{7}{10}$
 - b) Mixed Numbers (greater than 1): Examples— $1\frac{2}{3}, 2\frac{3}{5}, 3\frac{1}{5}, 4\frac{3}{10}$
 - c) Improper Fractions (greater than 1): Examples— $\frac{3}{2}, \frac{8}{3}, \frac{15}{4}, \frac{23}{5}$

- d) Decimals: Examples—0.25, 1.4, 2.75, 3.3, 4.9
- e) Percents: Examples 90%, 75%, 100
2. You may use any of the examples above or create your own. Make sure you follow the guidelines, and be creative.
3. You need to do at least ten numbers, but you may use more if you can fit them in neatly.
- Advanced: Place **three** values (a fraction, a decimal, a percent) at each interval (between 0 and 1, 0 and -1, 1 and 2, -1 and -2, etc.).

Sample



Grading Rubric

Criteria	4	3	2	1
Accuracy of Information	All information/work included is <u>completely</u> accurate; Work shows depth of higher understanding of standards	Nearly all information/work is accurate (only minor errors); All directions are followed	Most of the information/work is accurate; Most of the directions are followed	Very little/none of the information/work is accurate; Very little/none of the directions are followed
Neatness and Effort	All aspects of work are finalized <u>perfectly</u> ; included special touches that go beyond expectations	All aspects of work are finalized to expectations	Most of the work is finalized to expectations	Very little/none of the work is finalized to expectations

Standards Addressed

N.S. 1.1 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.

M.R. 2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.